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ABSTRACT

The academic achievement of participants in the Ten Schools Program (TSP) of the Los Angeles Unified School District (California) was compared with that of students in similar ccmparison schools and African American and Hispanic students throughout the school district. The TSP is a research-based instructional program for elementary school designed to improve academic achievement in urban schools that serve low achieving, at-risk students, primarily from minority groups. Academic achievement was measured by two norm-referenced tests the Stanford 9 and Aprenda administered in spring 1997. TSP students, as a total group, demonstrated a higher level of achievement in reading, mathematics, language arts, and spelling on the basic battery and the total battery than African American and Hispanic students in the comparison schools and districtwide, as measured by the Stanford tests. TSP student scores were lower than districtwide Hispanic and African American students in study skills, environmental skills, science, social science, listening, using information, and thinking skills as measured by the Stanford 9. Aprenda results indicate that TSP Hispanic students performed close to the national average or higher and scored higher than Hispanic students in comparison schools and throughout the school district. (Contains 10 tables and 12 figures.) (SLD)

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ED 429 161

TEN SCHOOLS PROGRAM

A COMPARATIVE STUDY OF STUDENT ACHIEVEMENT AS MEASURED BY STANFORD 9 AND APRENDA NORM-REFERENCED ACHIEVEMENT TESTS

Publication No. 769

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Program Evaluation and Research Branch
Los Angeles Unified School District
January 1999

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Ebrahim Maddahian, Evaluator

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EXECUTIVE SUMMARY

Purpose

This study primarily compared the academic achievement of the Ten Schools Program (TSP) students with two other mutually exclusive groups: students in the "comparison schools" and the African American and Hispanic students districtwide. The study's secondary objective was to examine the effect of gender on academic achievement for the three selected groups.

Academic achievement was measured by two norm-referenced tests administered in Spring 1997: Stanford 9 and Aprenda. Test scores from the two tests were used to compare the achievement of TSP students, who are predominantly African American and Hispanic, with the achievement of African American and Hispanic students districtwide and in the comparison schools.

Previous studies of District Integration Programs have indicated significant differences in academic achievement among students of various ethnic backgrounds. Since the student population of the TSP and comparison schools is 99% African American and Hispanic, comparing TSP student achievement to the achievement of African American and Hispanic students districtwide is appropriate for the purpose of this study.

The following is a summary of the study's findings:

- TSP students, as a total group, demonstrated a higher level of achievement in reading, mathematics, language arts, spelling, on the basic battery and on the total battery, than African American and Hispanic students in comparison schools and districtwide as measured by Stanford 9.

- TSP student scores were lower than districtwide African American and Hispanic students in study skills, environmental skills, science, social science, listening, using information and thinking skills as measured by Stanford 9.

- TSP students scored higher than the students in comparison schools in all subject areas assessed by the Stanford 9 battery of tests.

- The achievement pattern of TSP African American students, as measured by the Stanford 9 battery of tests, paralleled with minor variations, the pattern of achievement for African American students districtwide.

- TSP Hispanic students scored higher than Hispanic students in comparison schools and Hispanic students districtwide in all areas of achievement as measured by the Stanford 9 battery of tests--except in environmental skills--where their mean score was virtually identical to the District score.

- TSP Hispanic students scored higher than TSP African American students in all areas of achievement as measured by the Stanford 9 battery of tests.

- TSP, comparison schools, and districtwide female students scored higher than their respective male counterparts in nearly all subject areas as measured by Stanford 9 and Aprenda.

- Although TSP African American male students scored lower than other TSP groups on the Stanford 9 total battery, they scored higher than African American male students districtwide.

- TSP Hispanic students performed close to the national average or higher as measured by Aprenda and scored higher than Hispanic students in comparison schools and Hispanic students districtwide in all subject areas.

INTRODUCTION

Background

The Ten Schools Program (TSP) is a research-based instructional program, initiated by the Los Angeles Unified School District (LAUSD) in Fall 1987. The initial goal of TSP was to improve the student academic achievement in 10 urban schools that served at-risk, low achieving, predominantly African American students. However, the TSP student population has changed and is currently over 50% Hispanic.

This study is part of an ongoing evaluation of the District's Integration Programs commissioned by Student Integration Services and conducted by the Program Evaluation and Research Branch. The primary objective of the study was to compare the academic achievement of students in the Ten Schools Program with two other mutually exclusive groups: students in "comparison schools" and African American and Hispanic students districtwide. The secondary objective of the study was to examine the gender differences in academic achievement.

Study Design

The study answered eight research questions:

1. What is the academic achievement level of all TSP students, compared to all students in the comparison schools[1] and African American and Hispanic students districtwide[2], as measured by Stanford 9 tests?

2. What is the academic achievement level of TSP African American students, compared to the achievement of African American students in the comparison schools and African American students districtwide, as measured by Stanford 9 tests?

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[1] The term "comparison schools" refers to the 10 demographically-similar to TSP schools, selected at the inception of the Ten Schools Program (TSP), which serve as the TSP evaluation control group.

[2] The term "students districtwide" refers to only African American and Hispanic students in the District (LAUSD). For the purposes of this study, all other ethnic groups were not included in the districtwide student group.

3. What is the academic achievement level of TSP Hispanic students, compared to the achievement of Hispanic students in the comparison schools and Hispanic students districtwide, as measured by Stanford 9 tests?

4. What is the academic achievement level of TSP Hispanic students, compared to the achievement of Hispanic students in comparison schools and districtwide, as measured by Aprenda tests?

5. What is the academic achievement level of all TSP students, compared to African American and Hispanic student achievement in the comparison schools and districtwide by gender, as measured by Stanford 9 tests?

6. What is the academic achievement level of TSP African American students, compared to the African American students in comparison schools and districtwide by gender, as measured by Stanford 9 tests?

7. What is the academic achievement level of TSP Hispanic students, compared to the Hispanic students in comparison schools and districtwide by gender, as measured by Stanford 9 tests?

8. What is the academic achievement level of TSP Hispanic students, compared to Hispanic students in comparison schools and districtwide by gender, as measured by Aprenda tests?

The District elementary (grades 1-5) African American and Hispanic students, enrolled since first grade, were selected and classified into three mutually exclusive groups:

- students in the Ten Schools Program
- students in the comparison schools (control group)
- African American and Hispanic students in elementary schools districtwide

Only African American and Hispanic students districtwide were included in this study because the Ten Schools Program and the Comparison School student populations are 99% African American and Hispanic. Since previous studies have indicated significant differences in the academic performance of students from various ethnic groups, for the purposes of this study, TSP students, achievement was compared to the achievement of only African American and Hispanic students districtwide. It is important to note that more than 80% of the District student

population are of African American and Hispanic heritage (Ethnic Survey, Fall 1997). Additionally, only students who had been enrolled in a District school since kindergarten or first grade were selected for inclusion in the study.

Table 1 presents the ethnic distribution of students in the Ten Schools Program in 1986-87 and 1997-98. It highlights the dramatic shifts occurring in the TSP student population.

Table 1. Ten Schools Program Ethnic Distribution

School Name	African American		Hispanic	
	1986-87	1997-98	1986-87	1997-98
Barrett	67.1%	48.4%	31.2%	51.4%
Bright	72.0	44.2	26.9	55.4
Compton	68.7	43.4	30.7	56.4
Flournoy	71.4	48.1	28.3	51.9
King	63.4	42.6	34.2	56.1
McKinley	61.0	27.2	38.8	72.8
96th Street	65.8	35.8	32.7	64.1
93rd Street	66.2	35.5	33.8	64.3
102nd	78.3	53.4	21.7	46.5
112th Street	75.8	42.8	23.2	57.2

Stanford 9 Academic Achievement Tests

The Stanford 9 contains a battery of 11 achievement tests for grades 1-5. However, the number of tests given at each grade level differs. Table 2 presents a matrix of tests included in Stanford 9 by grade level: first and second graders respond to six tests, third graders respond to nine tests, and fourth and fifth graders respond to 10 of the 11 tests.

Table 2. Matrix of Stanford 9 Tests by Grade Level

Tests	Grade level				
	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade
Reading	√	√	√	√	√
Mathematics	√	√	√	√	√
Language Arts	√	√	√	√	√
Spelling	√	√	√	√	√
Environmental Skills	√	√			
Listening	√	√	√	√	√
Study Skills				√	√
Science			√	√	√
Social Science			√	√	√
Using Information			√	√	√
Thinking Skills			√	√	√

Aprenda Achievement Tests

The Aprenda contains a battery of seven achievement tests for grades 1-5. However, the number of tests given at each grade level differs. Table 3 presents a matrix of Aprenda tests by grade level: first and second graders respond to five tests, while third, fourth and fifth graders respond to all seven tests.

Table 3. Matrix of Aprenda Tests by Grade Level

Test	Grade level				
	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade
Reading	√	√	√	√	√
Mathematics	√	√	√	√	√
Language Arts	√	√	√	√	√
Spelling	√	√	√	√	√
Listening	√	√	√	√	√
Study Skills			√	√	√
Thinking Skills			√	√	√

RESULTS

First Research Question

What is the academic achievement level of all TSP students, compared to all students in the comparison schools and African American and Hispanic students districtwide, as measured by Stanford 9 tests?

Table 4 presents Stanford 9 mean Normal Curve Equivalent[3] (NCE) scores for students in TSP, the comparison schools, and African American and Hispanic students districtwide, in grades 1-5. This table includes the mean NCE scores for the 11 tests included in the battery, the basic skills scores (combination of reading, language arts, mathematics, spelling, and listening), and the total battery scores.

Data in Table 4 indicate:

- TSP students scored higher than districtwide African American and Hispanic students in reading, mathematics, language arts and spelling. Their listening scores were identical.
- TSP students' average scores on the basic and total Stanford 9 battery were higher than the District averages for districtwide African American and Hispanic students.
- TSP students scored below the average scores of districtwide African American and Hispanic students in study skills, environmental skills, science, social science, using information, and thinking skills.
- TSP students scored higher than comparison school students in all 11 areas measured by Stanford 9. For the total battery of tests, the mean NCE score for TSP students was 31.79 versus 23.91 for the comparison school students.

[3] Normal Curve Equivalent (NCE). A standardized scale of scores developed by the U.S. Department of Education. This scale has a normal curve distribution with the mean of 50, and standard deviation of 21

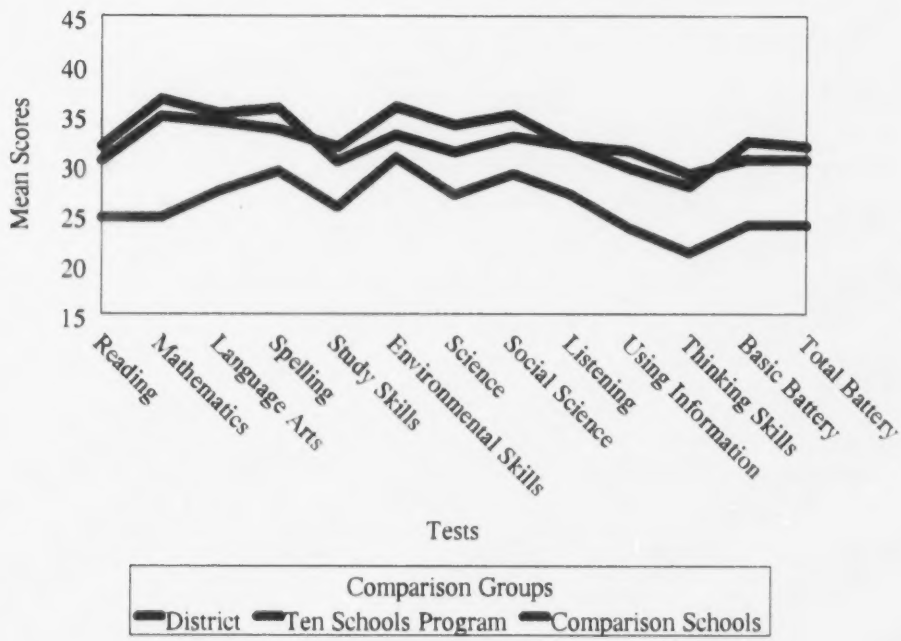
Table 4. Stanford 9 Mean NCE Scores

Tests	Districtwide		Ten Schools Program		Comparison Schools	
	Mean	N[4]	Mean	N	Mean	N
Reading	30.43	86,225	31.87	3,741	24.64	3,924
Mathematics	34.79	86,225	36.56	3,741	27.78	3,924
Language Arts	34.22	86,225	35.10	3,741	27.34	3,924
Spelling	33.50	86,225	35.64	3,741	29.32	3,924
Study Skills	31.77	27,782	30.29	1,091	25.73	1,229
Environmental Skills	35.83	40,121	32.94	1,582	30.67	1,839
Science	33.97	46,106	31.21	1,889	26.93	2,085
Social Science	35.00	46,106	32.80	1,889	29.03	2,085
Listening	31.84	86,225	31.84	3,741	26.92	3,924
Using Information	31.31	46,106	29.59	1,884	23.58	2,085
Thinking Skills	29.03	46,106	27.82	1,884	21.14	2,085
Basic Battery	30.50	86,225	32.32	3,741	23.92	3,924
Total Battery	30.45	86,225	31.79	3,741	23.91	3,924

Figure 1 presents the above data in graphical format. It depicts marginal differences between the performance of TSP students as a total group and the performance of the districtwide African American and Hispanic student population. The differences shown between the performance of TSP and comparison school students are statistically significant and educationally meaningful.

[4] N represents the number of students

Figure 1. Stanford 9 Mean NCE Scores



Second Research Question

What is the academic achievement level of TSP African American students, compared to the achievement of African American students in the comparison schools and African American students districtwide, as measured by Stanford 9 tests?

Table 5 presents student achievement outcomes for both African American and Hispanic students, respectively. The table includes Stanford 9 mean NCE scores for 11 tests, the basic battery of skills, and the total battery. Figures 2 and 3 present the Table 5 data in graphical format.

Data in Table 5 indicate:

- TSP African American students scored higher than African American students districtwide in reading, mathematics, language arts, spelling, the basic, and total Stanford 9 battery.
- TSP African American students scored significantly higher than the comparison school African American students in all subject areas. TSP African American students' average score for the total battery was 30.09 compared to 21.92 for African American students in the comparison schools.
- TSP African American students scored lower than African American students districtwide in study skills, environmental skills, science, social science, listening, using information skills, and thinking skills.

Third Research Question

What is the academic achievement level of TSP Hispanic students, compared to the achievement of Hispanic students in the comparison schools and Hispanic students districtwide, as measured by Stanford 9 tests?

Data in Table 5 also indicate:

- TSP Hispanic students outperformed both comparison school and districtwide Hispanic students in all areas of academic achievement except environmental skills (36.44), which aligns closely to the District average (36.54).

- TSP Hispanic students' average score for the total battery was 36.00 compared to the scores for Hispanic students districtwide (31.24) and for the Hispanic students in the comparison schools (28.27). These differences are statistically significant and educationally meaningful.

- TSP Hispanic students scored higher than TSP African American students in all areas of achievement as measured by the Stanford 9 battery of tests.

Table 5. Stanford 9 Mean NCE Scores by Ethnicity

Ethnicity	Subject Area	Districtwide		Ten School Program		Comparison Schools	
		Mean	N	Mean	N	Mean	N
African American	Reading	29.53	24,342	30.53	2,474	23.25	2,689
	Mathematics	31.58	24,342	33.91	2,474	25.13	2,689
	Language Arts	32.52	24,342	33.22	2,474	25.95	2,684
	Spelling	34.64	24,342	35.30	2,474	28.99	2,689
	Study Skills	30.12	6,435	27.41	633	24.15	718
	Environmental Skills	34.26	12,524	31.99	1,242	29.23	1,373
	Science	30.64	11,818	28.55	1,232	24.93	1,316
	Social Science	32.66	11,818	30.36	1,232	27.44	1,316
	Listening	32.28	24,342	31.43	2,474	26.57	2,689
	Using Information	28.00	11,818	26.49	1,232	21.42	1,316
	Thinking Skills	25.92	11,818	24.69	1,232	19.10	1,316
	Basic Battery	28.73	24,342	30.66	2,474	22.02	2,689
	Total Battery	28.45	24,342	30.09	2,474	21.92	2,689
Hispanic	Reading	30.79	61,883	35.21	997	27.66	1,235
	Mathematics	36.05	61,883	43.13	997	33.55	1,235
	Language Arts	34.89	61,883	39.75	997	30.36	1,235
	Spelling	33.05	61,883	36.48	997	30.04	1,235
	Study Skills	32.27	21,347	34.27	458	27.96	511
	Environmental Skills	36.54	27,597	36.44	340	34.88	466
	Science	35.12	34,268	36.21	657	30.36	769
	Social Science	35.80	34,268	37.39	657	31.75	769
	Listening	31.66	61,883	32.84	997	27.07	1,235
	Using Information	32.45	34,268	35.40	657	27.26	769
	Thinking Skills	30.10	34,268	33.70	657	24.63	769
	Basic Battery	31.19	61,883	36.43	997	28.07	1,235
	Total Battery	31.24	61,883	36.00	997	28.27	1,235

Figure 2. Stanford 9 Mean NCE Scores
for African American Students

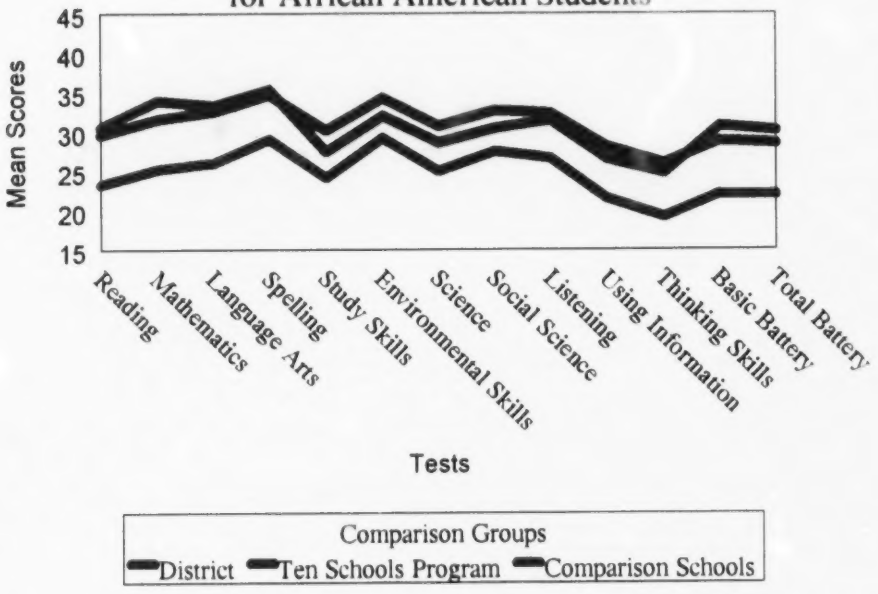
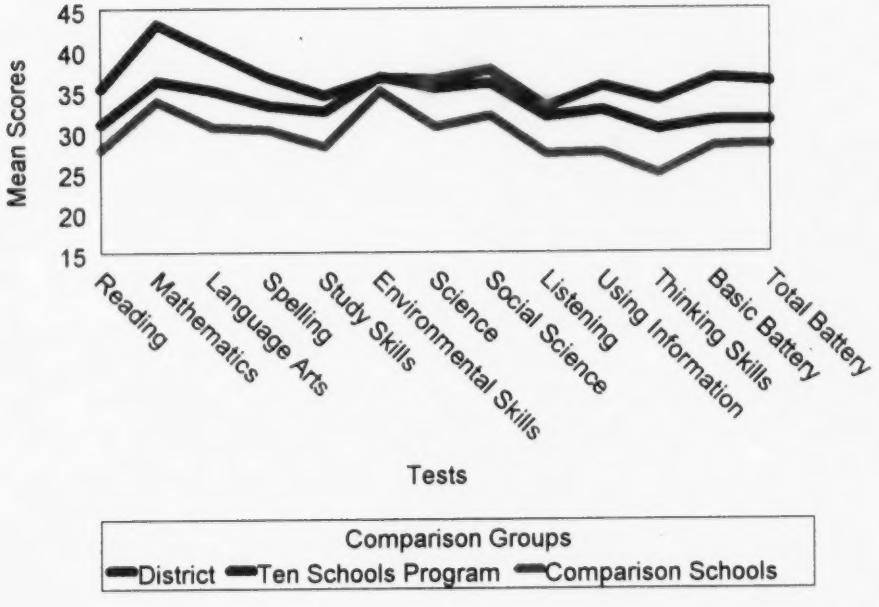


Figure 3. Stanford 9 Mean NCE Scores
for Hispanic Students



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Fourth Research Question

What is the academic achievement level of TSP Hispanic students, compared to the achievement of Hispanic students in comparison schools and districtwide, as measured by Aprenda tests?

Table 6 presents student achievement outcomes for grades 1-5 Hispanic students in the TSP, comparison schools, and districtwide. This table includes the mean NCE scores for the seven Aprenda tests and the basic battery of skills. See Figure 4 for a graphic presentation of Table 6 data.

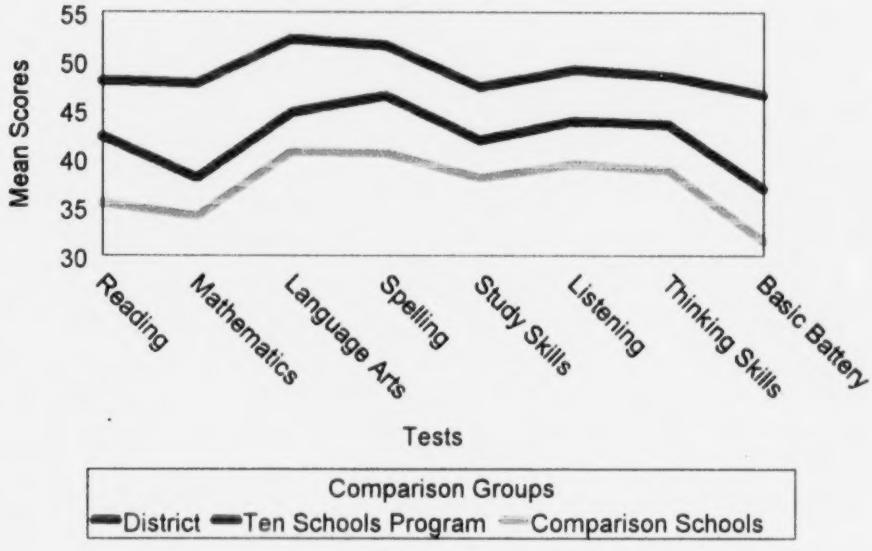
Data in Table 6 indicate:

- TSP Hispanic students scored higher than Hispanic students in comparison schools and districtwide in all areas of academic achievement measured by Aprenda.
- The average Aprenda basic battery score for TSP Hispanic students was 46.60, compared to 31.56 for Hispanic students in comparison schools and 36.92 for Hispanic students districtwide. This denotes a 16-point difference between TSP Hispanic students and Hispanic students in the comparison schools; and reflects a 10-point difference between the performance of TSP Hispanic students and Hispanic students districtwide.

Table 6. Aprenda Mean NCE Scores

	Districtwide		Ten Schools Program		Comparison Schools	
Subject Area	Mean	N	Mean	N	Mean	N
Reading	42.29	87,775	48.03	2,155	35.45	2,113
Mathematics	38.01	87,775	47.74	2,155	34.09	2,113
Language Arts	44.72	87,775	52.29	2,155	40.72	2,113
Spelling	46.44	87,775	51.63	2,155	40.55	2,113
Study Skills	41.90	35,970	47.35	800	38.03	750
Listening	43.82	87,775	49.11	2,155	39.43	2,113
Thinking Skills	43.46	35,970	48.49	800	38.81	750
Basic Battery	36.92	87,775	46.60	2,155	31.56	2,113

Figure 4. Aprenda Mean NCE Scores
for Hispanic Students



Fifth Research Question

What is the academic achievement level of all TSP students, compared to African American and Hispanic student achievement in the comparison schools and districtwide by gender, as measured by Stanford 9 tests?

Table 7 presents the academic achievement outcomes by gender. Figures 5 and 6 present Table 7 data in graphical format. Although the pattern of achievement for female and male TSP students is relatively the same, the general trend denotes female students slightly outperform male students in nearly all subject areas across the three comparison groups.

Table 7. Stanford 9 Mean NCE Scores by Gender

Gender	Subject Area	Districtwide		Ten Schools Program		Comparison Schools	
		Mean	N	Mean	N	Mean	N
Female	Reading	31.95	41,829	34.02	1,719	26.02	1,934
	Mathematics	35.23	41,829	37.42	1,719	28.10	1,934
	Language Arts	36.36	41,829	37.42	1,719	28.98	1,934
	Spelling	35.31	41,829	37.79	1,719	31.53	1,934
	Study Skills	33.52	13,494	31.91	542	26.96	606
	Environmental Skills	35.14	19,403	33.10	782	30.83	903
	Science	34.03	22,426	31.47	937	27.12	1,031
	Social Science	36.21	22,426	33.79	937	29.88	1,031
	Listening	32.46	41,829	33.30	1,719	27.95	1,934
	Using Information	32.49	22,426	30.72	937	24.33	1,031
	Thinking Skills	30.38	22,426	29.56	937	21.92	1,031
	Basic Battery	31.73	41,829	34.11	1,719	25.02	1,934
	Total Battery	31.54	41,829	33.47	1,719	24.90	1,934
Male	Reading	29.01	44,396	29.77	1,752	23.29	1,990
	Mathematics	34.38	44,396	35.71	1,752	27.47	1,990
	Language Arts	32.20	44,396	32.81	1,752	25.74	1,990
	Spelling	31.80	44,396	33.53	1,752	27.18	1,990
	Study Skills	30.11	14,288	28.70	549	24.54	623
	Environmental Skills	36.47	20,718	32.79	800	30.51	936
	Science	33.91	23,678	30.97	952	26.75	1,054
	Social Science	33.84	23,678	31.83	952	28.20	1,054
	Listening	31.25	44,396	30.40	1,752	25.93	1,990
	Using Information	30.20	23,678	28.47	952	22.84	1,054
	Thinking Skills	27.75	23,678	26.11	952	20.38	1,054
	Basic Battery	29.34	44,396	30.55	1,752	22.86	1,990
	Total Battery	29.43	44,396	30.14	1,752	22.96	1,990

Figure 5. Stanford 9 Mean NCE Scores for Female Students

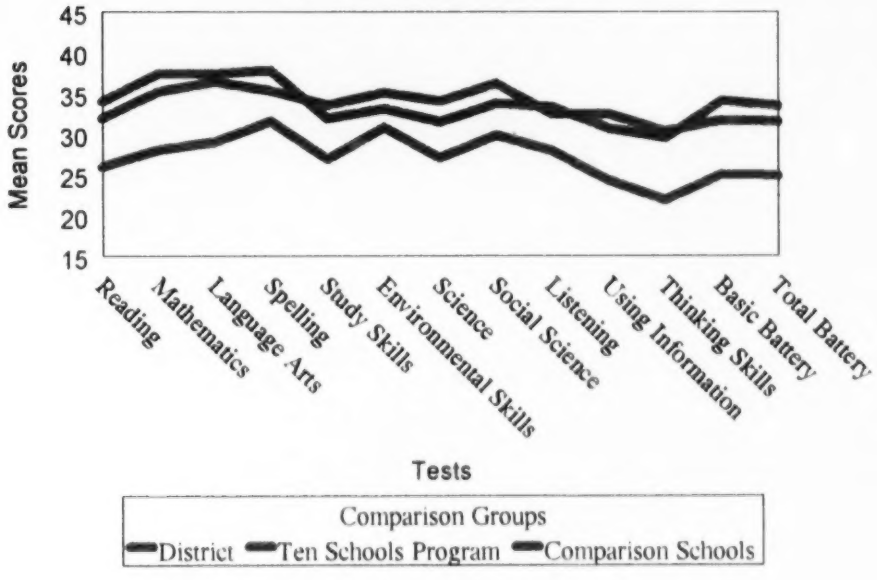
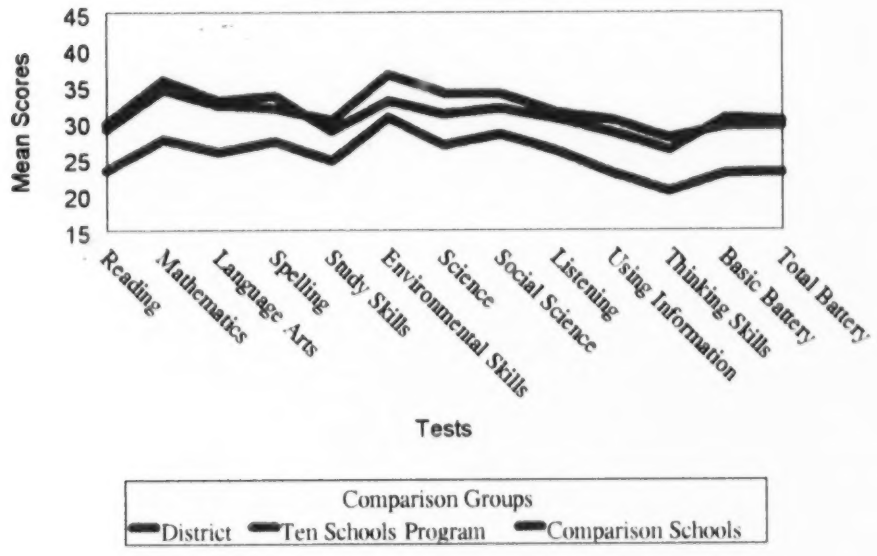


Figure 6. Stanford 9 Mean NCE Scores for Male Students



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Sixth Research Question

What is the academic achievement level of TSP African American students, compared to the African American students in comparison schools and districtwide by gender, as measured by Stanford 9 tests?

Table 8 and Figures 7 and 8 present the achievement performance of African American students by gender. African American female students outperformed African American male students in all subject areas, across the three comparison group.

Table 8. Stanford 9 Mean NCE Scores for African American Students by Gender

		Districtwide		Ten Schools Program		Comparison Schools	
Gender	Subject Area	Mean	N	Mean	N	Mean	N
Female	Reading	31.63	12,079	32.82	1,243	25.11	1,362
	Mathematics	32.52	12,079	35.00	1,243	26.15	1,362
	Language Arts	35.02	12,079	35.50	1,243	27.69	1,362
	Spelling	37.25	12,079	37.87	1,243	31.49	1,362
	Study Skills	32.71	3,179	29.35	316	26.33	364
	Environmental Skills	34.24	6,174	32.18	626	29.90	702
	Science	31.55	5,905	29.19	617	25.81	660
	Social Science	34.56	5,905	31.64	617	28.39	660
	Listening	33.57	12 079	33.12	1,243	28.12	660
	Using Information	29.88	5,905	27.89	617	22.61	660
	Thinking Skills	28.13	5,905	26.65	617	20.18	660
	Basic Battery	30.62	12,079	32.57	1,243	23.56	1,362
	Total Battery	30.23	12,079	31.85	1,243	23.35	1,362
Male	Reading	27.46	12,263	28.21	1,231	21.34	1,327
	Mathematics	30.66	12,263	32.81	1,231	24.08	1,327
	Language Arts	30.66	12,263	30.92	1,231	24.17	1,327
	Spelling	32.06	12,263	32.71	1,231	26.43	1,327
	Study Skills	27.58	3,256	25.48	317	21.90	354
	Environmental Skills	34.27	6,350	31.79	616	28.54	671
	Science	29.73	5,913	27.91	615	24.05	656
	Social Science	30.76	5,913	29.07	615	26.48	656
	Listening	31.01	12,263	29.73	1,231	24.97	1,327
	Using Information	26.12	5,913	25.08	615	20.23	656
	Thinking Skills	23.71	5,913	22.72	615	18.02	656
	Basic Battery	26.87	12,263	28.73	1,231	20.45	1,327
	Total Battery	26.70	12,263	28.31	1,231	20.44	1,327

Figure 7. Stanford 9 Mean NCE Scores
for Female African American Students

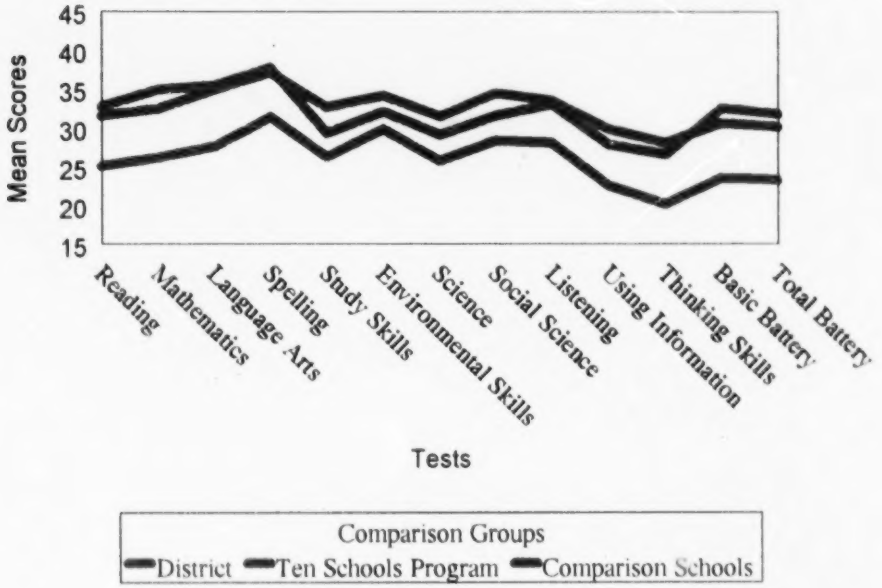
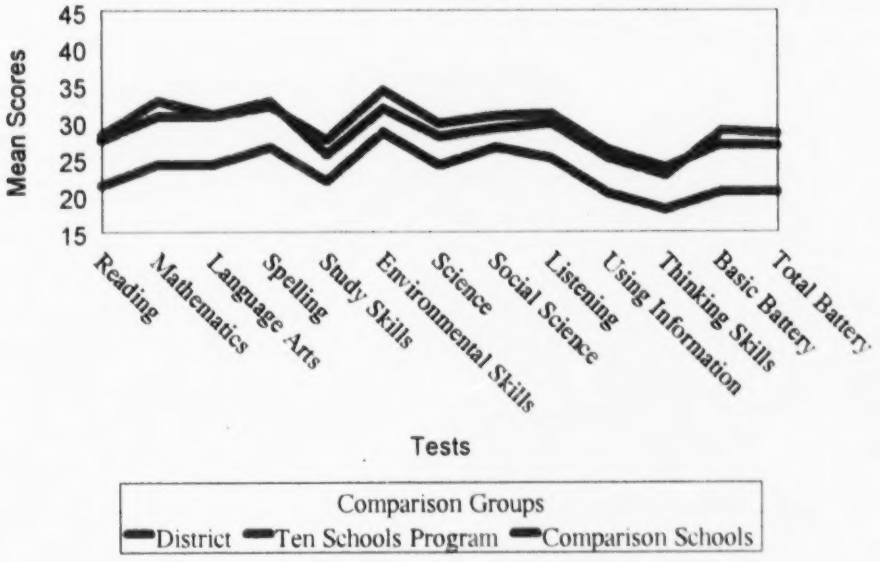


Figure 8. Stanford 9 Mean NCE Scores
for Male African American Students



Seventh Research Question

What is the academic achievement level of TSP Hispanic students, compared to the Hispanic students in comparison schools and districtwide by gender, as measured by Stanford 9 tests?

Table 9 and Figures 9 and 10 present the achievement performance of TSP Hispanic students by gender. The same achievement pattern emerges as other comparisons, with one exception: male Hispanic students scored slightly higher than female Hispanic students in science.

Table 9. Stanford 9 Mean NCE Scores for Hispanic Students by Gender

		Districtwide		Ten Schools Program		Comparison Schools	
Gender	Subject Area	Mean	N	Mean	N	Mean	N
Female	Reading	32.08	29,750	37.14	476	28.19	562
	Mathematics	36.33	29,750	43.75	476	32.74	562
	Language Arts	36.90	29,750	42.45	476	32.05	562
	Spelling	34.52	29,750	37.58	476	31.61	562
	Study Skills	33.77	10,315	35.48	226	27.90	242
	Environmental Skills	35.56	13,229	36.82	156	34.06	201
	Science	34.92	16,521	35.85	320	29.46	371
	Social Science	36.81	16,521	37.94	320	32.51	371
	Listening	32.01	29,750	33.76	476	27.52	562
	Using Information	33.42	16,521	36.20	320	27.40	371
	Thinking Skills	31.19	16,521	35.19	320	25.02	371
	Basic Battery	32.19	29,750	38.16	476	28.48	562
	Total Battery	32.07	29,750	37.69	476	28.57	562
Male	Reading	29.60	32,133	33.44	521	27.20	663
	Mathematics	35.80	32,133	42.57	521	34.25	663
	Language Arts	33.02	32,133	37.29	521	28.90	663
	Spelling	31.70	32,133	35.47	521	28.69	663
	Study Skills	30.86	11,032	33.10	232	28.02	269
	Environmental Skills	37.44	14,368	36.12	184	35.51	265
	Science	35.30	17,765	36.54	337	31.20	398
	Social Science	34.87	17,765	36.87	337	31.04	398
	Listening	31.34	32,133	32.00	521	27.86	663
	Using Information	31.56	17,765	34.65	337	27.14	398
	Thinking Skills	29.09	17,765	32.29	337	24.27	398
	Basic Battery	30.28	32,133	34.86	521	27.70	663
	Total Battery	30.47	32,133	34.46	521	28.01	663

Figure 9. Stanford 9 Mean NCE Scores
for Female Hispanic Students

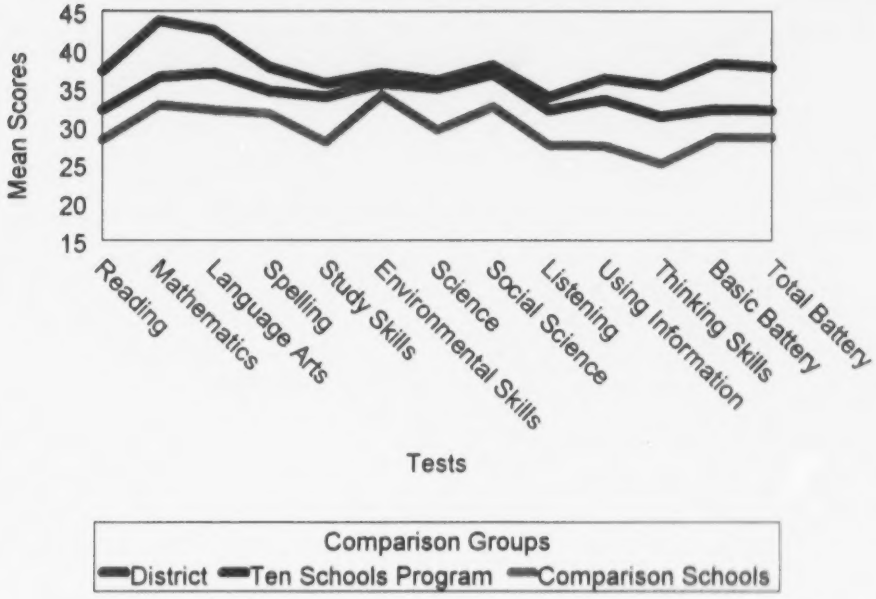
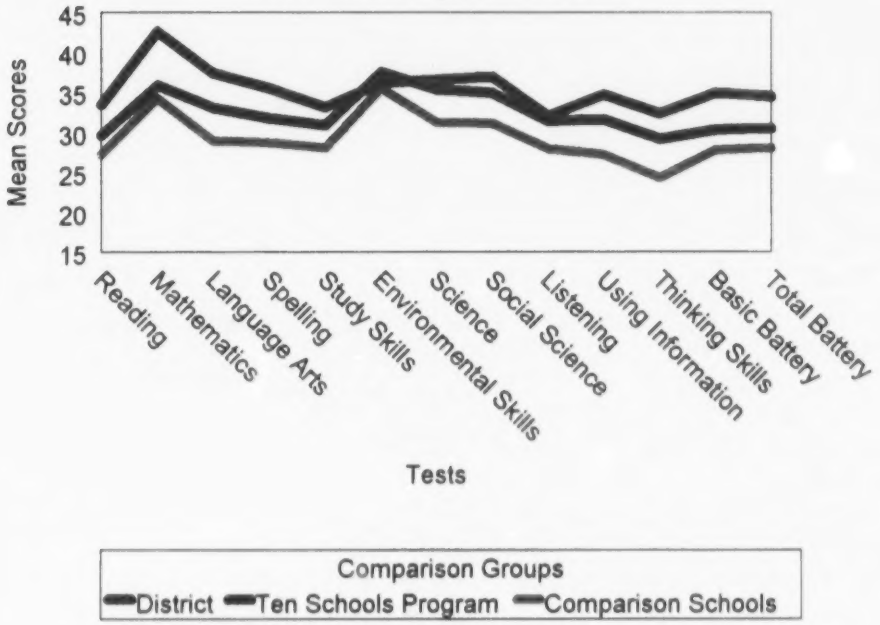


Figure 10. Stanford 9 Mean NCE Scores
for Male Hispanic Students



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Eighth Research Question

What is the academic achievement level of TSP Hispanic students, compared to Hispanic students by gender, in comparison schools and districtwide, as measured by Aprenda tests?

Table 10 presents Aprenda scores for Hispanic students by gender. Figures 11 and 12, on the next page present the same data in graphical format. Table 10 indicates that female students scored higher than male students in nearly all subject areas across the three comparison groups.

Table 10. Aprenda Mean NCE Scores for Hispanic Students by Gender

		Districtwide		Ten Schools Program		Comparison Schools	
Gender	Subject Area	Mean	N	Mean	N	Mean	N
Female	Reading	44.82	44,136	50.98	1,095	37.47	1,025
	Mathematics	38.22	44,136	48.17	1,095	34.05	1,025
	Language Arts	47.04	44,136	55.09	1,095	42.85	1,025
	Spelling	49.06	44,136	54.54	1,095	42.99	362
	Study Skills	43.98	18,170	49.42	412	39.45	1,025
	Listening	45.33	44,136	50.92	1,095	40.75	362
	Thinking Skills	44.84	18,170	50.25	412	40.30	1,025
	Basic Battery	38.69	44,136	48.64	1,095	33.11	362
Male	Reading	39.73	43,634	45.00	1,059	33.55	1,088
	Mathematics	37.80	43,634	47.25	1,059	34.13	1,088
	Language Arts	42.38	43,634	49.41	1,059	38.72	1,088
	Spelling	43.79	43,634	48.64	1,059	38.24	1,088
	Study Skills	39.79	17,798	45.16	388	36.72	388
	Listening	42.29	43,634	47.25	1,059	38.19	1,088
	Thinking Skills	42.06	17,798	46.61	388	37.42	388
	Basic Battery	35.13	43,634	44.51	1,059	30.10	1,088

Figure 11. Aprenda Mean NCE Scores
for Female Hispanic Students

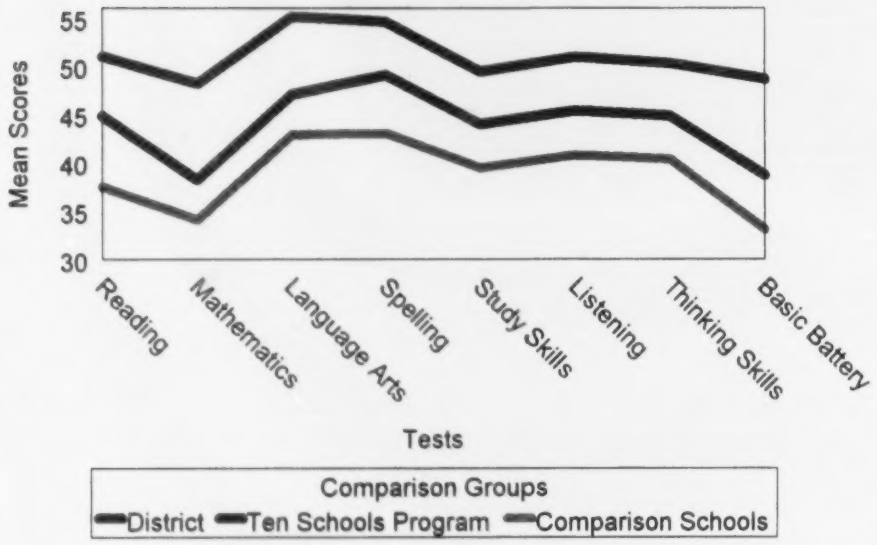
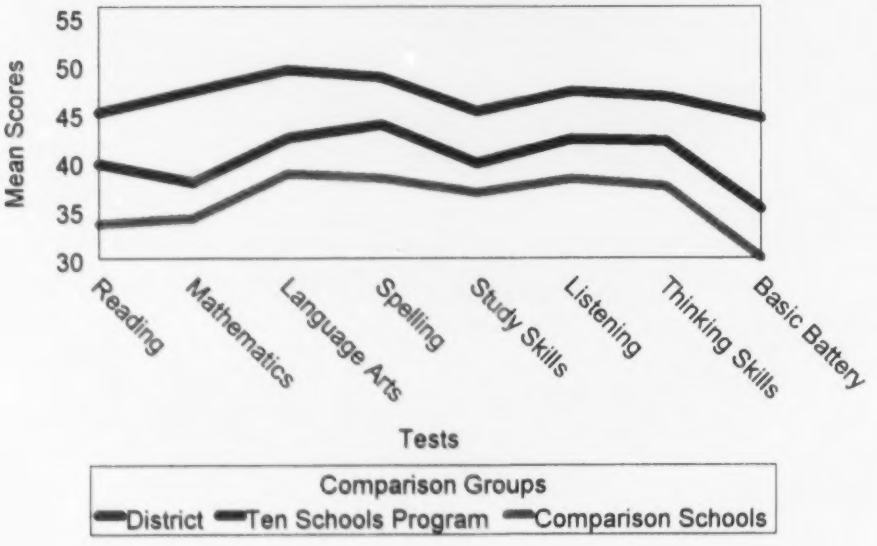


Figure 12. Aprenda Mean NCE Scores
for Male Hispanic Students



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SUMMARY OF FINDINGS

The study's findings confirm the positive impact of the Ten Schools Program on student achievement.

- TSP students, as a total group, demonstrated a higher level of achievement in reading, mathematics, language arts, spelling, on the basic battery and on the total battery, than African American and Hispanic students in comparison schools and districtwide as measured by Stanford 9.

- TSP student scores were lower than districtwide African American and Hispanic students in study skills, environmental skills, science, social science, listening, using information and thinking skills as measured by Stanford 9.

- TSP students scored higher than the students in comparison schools in all subject areas assessed by the Stanford 9 battery of tests.

- The achievement pattern of TSP African American students, as measured by the Stanford 9 battery of tests, paralleled with minor variations, the pattern of achievement for African American students districtwide.

- TSP Hispanic students scored higher than Hispanic students in comparison schools and Hispanic students districtwide in all areas of achievement as measured by the Stanford 9 battery of tests--except in environmental skills--where their mean score was virtually identical to the District score.

- TSP Hispanic students scored higher than TSP African American students in all areas of achievement as measured by the Stanford 9 battery of tests.

- TSP, comparison schools, and districtwide female students scored higher than their respective male counterparts in nearly all subject areas as measured by Stanford 9 and Aprenda.

- Although TSP African American male students scored lower than other TSP groups on the Stanford 9 total battery, they scored higher than African American male students districtwide.

- TSP Hispanic students performed close to the national average or higher as measured by Aprenda and scored higher than Hispanic students in comparison schools and Hispanic students districtwide in all subject areas.

RECOMMENDATIONS

The results of this comparative study confirm the positive impact of TSP on student achievement. TSP students outperformed their African American and Hispanic counterparts in comparison schools in all subject areas, and districtwide in basic skills. The data also revealed differences in achievement levels among students in TSP: male students scored lower than female students; African American students scored lower than other groups represented in TSP schools; and African American male students scored the lowest of all groups.

Based on the findings, it is recommended that all low achieving students, African American male students in particular, receive substantially increased academic support and in-depth intervention that exceed current levels provided in the core TSP curriculum. The following are strategies that could be considered for implementation to increase TSP support and in-depth intervention for low achieving students:

- Provide for extended learning time for the lowest achieving students in the area of reading/language arts.
- Utilize thematic, hands-on, concrete learning experiences based on the State and District Standards. Emphasize specific subject matter such as science, social science, study skills and thinking skills.
- Introduce a tutorial system that matches peers, upper graders, or teacher assistants with individual at-risk male students.
- Address individual strengths and modalities with supplementary special interest reading materials; teaching with games, drawing and artistic expression; listening and doing, etc.
- Assign students to take advantage of school resources such as computer labs, game clubs (teaching checkers, chess, etc.), orchestra, dance, drama, and public speaking opportunities offered by PEP and the Language Development Program for African American Students.
- Provide assessments and interest inventories to further individualize each student's academic program. Fold results into classroom learning experiences.

- Provide intensified home-school communication that includes homework activities dependent on parent-student-classroom collaboration. Plan activities calling for parents and students to work jointly to solve a problem and meet jointly for culminations. Build into the existing TSP curriculum a design to accommodate this type of activity (flexible scheduling, using the auditorium or outside pavilion areas to conduct large group classes, group field trips, etc.).

It is also recommended that further studies be conducted to pinpoint the major obstacles preventing the lowest achieving students from achieving academic equity. These studies should correlate findings with solutions to improve student achievement. Solutions will not only be applicable to TSP students, but to low achieving students districtwide.